NOAA FISHERIES
Pacific Islands Fisheries Science Center

Background and PIFSC Response Concerning Review Panel Reports From The External Review of Information For Fishery Stock Assessments June 25-27, 2013 Honolulu, Hawaii.

The following provides an overview of the objectives of the PIFSC 2013 external review and our brief response to the review panel's reports which are provided here [URL]. More material on the review can be found here:

http://www.pifsc.noaa.gov/media/news/peer_review_of_data_management_2013.php

Program Review:

In January of 2013, NOAA Fisheries initiated a standardized five-year cycle to peer review science conducted by each of the six science centers and the headquarters Office of Science and Technology. Each year will have a specific thematic focus with this year's focus on the information collected and compiled for fishery stock assessments. We invited experts from both inside and outside the federal government to evaluate our approach to the information used in assessments of highly migratory species, and insular species such as bottomfish and coral reef species. We welcomed this opportunity to illustrate the strides we have made in our efforts to collect and utilize such information and to receive guidance to improve our systems to offer the greatest utility and transparency possible.

Panel:

The PIFSC review was held in June, 2013, in Honolulu. The review panelists were respected members of the scientific community across the country.

- Gordon Tribble, Chair, US Geological Survey in Honolulu, Hawaii
- Dave Colpo, Pacific States Marine Fisheries Commission in Portland, Oregon
- Craig MacDonald, NOAA Marine Sanctuaries in Scituate, Massachusetts
- Steve Martell, International Pacific Halibut Commission in Seattle, Washington
- Joseph E Powers, Louisiana State University in Baton Rouge Louisiana
- Steve Turner, NOAA Southeast Fisheries Science Center in Miami, Florida
- Cisco Werner, NOAA Southwest Fisheries Science Center in La Jolla, California

Focus:

Within broad national Terms of Reference, we focused this review on information directed toward three typical fishery stock assessments conducted by PIFSC and our partners: striped marlin as representative of highly migratory species, Main Hawaiian Islands bottomfish, as

representative of deep slope groundfish, and coral reef fish. Much of the information for our stock assessments is fishery-dependent data, i.e., information collected by logbooks, creel and port surveys, and dealer reports, and much less so on fisher-independent survey data, e.g., information collected by NOAA research cruises. Nonetheless, we include both sources of information in our assessments and provided background information on both sources as well as the role of habitat and oceanographic data during the review.

Fishery stock assessments and corollary analyses (e.g., Annual Catch Limits) in this region include in-house, international, and collaborative work. Our international assessments for highly migratory species (tunas, billfish, etc.) are conducted through the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), and the Western and Central Pacific Fisheries Commission. Additional information for highly migratory species stock assessments comes from our colleagues at the Southwest Fisheries Science Center in La Jolla, CA. We are solely responsible for bottomfish assessments, and provide all of scientific input for their management. We collaborate extensively to provide fishery information to staff at the Western Pacific Fishery Management Council who developed the Annual Catch Limits (ACLs) for coral reef species in this region.

The basic objective of the review was to see if PIFSC is collecting and compiling the right information for fishery assessments in the right way, and to learn how we can improve the collection and compilation of this information. We asked the panel to provide their insights on the following questions:

- Relationship of current and planned fishery assessment data activities to Center fishery assessments mandates and requirements – is the Center doing the right things?
- Opportunities – are there opportunities that the Center should be pursuing in collecting and compiling fishery assessment data, including shared approaches with partners?
- Scientific/technical approach – are the Center's fishery data objectives adequate, and is the Center using the best suite of techniques and approaches to meet those objectives?
- Organization and priorities – is the Center's fishery data system properly organized to meet its mandates and is the allocation of resources among program appropriate?
- Scientific conduct – are the Center's fishery data programs being conducted properly (survey design, standardization, integrity, peer review, transparency, confidentiality, PII, etc.)?

A few topics of significance were not covered due to time constraints and staying focused on the national terms of reference:

Non-Assessment Data Requests: Most of the fishery-dependent data collected at PIFSC and through our collaborators in the Western Pacific Fisheries Information Network (WPacFIN) program is also used to meet a broad range of requests for information on the status or activities of regional fisheries, including quota monitoring reports, regional fishery statistics, and summaries for fishery management plan amendments and environmental assessments, etc. We did not discuss these types of data products in this review, but they are important and frequently take significant resources. Both our fisheries dependent and independent data sources are documented in the NMFS InPort metadata catalog system. [https://inport.nmfs.noaa.gov/inport/]

Observer program operations and data: Another area not included in this Program Review was the regional observer program managed by PIRO. The primary mandate for this program is to provide information to estimate and monitor protected species by-catch

by the U.S. longline fisheries operating out of American Samoa and Hawaii. We will highlight this program when the agency reviews its protected species science in two years. Where the PIRO observer program provides fishery information, we utilize it. During the review we provided an example of validating (and correcting) logbook data using observer data.

Conclusion:

The review panel members prepared individual reports based on their observations during the three days of this review. The panelists were not paid for participating in this review, so we very much appreciate their willingness to dedicate a week of their time to this mission. It is the kind of attention to scientific integrity that is well placed.

We also appreciate the involvement of our partners and stakeholders, as well as, of course, all of our staff who have prepared and presented material for this review. We have tried to balance thoroughness with succinctness. If nothing else is accomplished, we have compiled a good overview of our fishery information programs by this review. But, of course, we hope for more.

Response to Recommendations and Other Observations

The review provided us with a broad range of excellent recommendations. We view the review as a good, hard, positive review. In this report, we are not responding directly to each observation and recommendation, but the following are our thoughts and proposals to some key messages we received from the review. Many of these points are also incorporated in PIFSC FY14 milestones that can be reviewed at:

http://intra.pifsc.gov/do/milestones_fy14

- We should do a better job of integrating our fishery monitoring and information programs, and integrating those programs with its fishery assessment and analysis programs. Some of this is a matter of communication, some of coordination. All of it involves willpower to look at the whole of our scientific enterprise and not just at its individual pieces and their individual mandates.
    - Our fishery programs need dedicated analytical support to regularly examine the data, sampling programs supporting the collection of data, and the utility of the data products. The required expertise must extend beyond the functions of data processing to understanding of the fisheries and the uses of the fisheries data by all programs in the PIFSC. These staff should operate across the user programs and with our centralized information and data management services to provide the maximum use of new and existing data collected by PIFSC.
        - In order to accomplish this, we are prioritizing the backfill of a key, senior fishery data management position and are reorganizing its Center-level data management structure to allow greater focus by key fishery programs on their data integration requirements.

- We agree that our fishery programs need to continue progress on centralizing and streamlining data management. Product development, meeting data requests in a timely fashion, usefulness of data in the assessment process all more easily flow from a well-constructed and integrated data set. An important component of this is records flow, especially the effort required for revisions. Ensuring proper documentation of changes in key fishery monitoring time-series is required to minimize duplication of effort when changes are necessary. This keeps the user informed about the nuances of the data and eliminates repetition of corrections by data managers. We will conduct an audit (completion expected in August 2014) to examine the longline data management process and provide concrete recommendations for revising the existing process, including revisions to the longline logbook data entry and archiving process and its integration with landing weights. In addition, the Hawaii and American Samoa longline logbook data, as well as Regional Fishery Management Organization (RFMO) international reporting data, will be "frozen" at the point of publication so that all research staff are operating from the same source of original data (July 2014).

- We agree that scientists throughout the Center need easier accessibility to fisheries and environmental data. In addition, we should provide access to its most requested data, both confidential for internal users and non-confidential for the public, in an on-line portal. This frees up valuable staff time from simple tasks that users can perform themselves. To meet this need, we are currently piloting an in-house data portal providing access to longline data which should be operational in summer of 2014. This effort is expected to expand through time to include other types of data collected at PIFSC. In addition, there will be expanded use of metadata using the InPort system for fisheries data (particularly for WPacFIN data).

- We agree that greater documentation of research activities, fishery monitoring and collections, and underlying data structures will help us in many quarters e.g., a handbook for bio-sampling protocols, creel surveys, assessments, criteria for who can access data, assumptions and analysis for product development.

    - This year we will publish a series of reports detailing the data collection protocols and procedures for PIFSC-supported boat and shore based surveys in Guam, American Samoa and Saipan.

    - We also had commissioned a review of the adequacy of current total catch and fishing effort estimation methodologies for insular species in the WPacFIN (Western Pacific Fishery Information Network) jurisdictions (American Samoa, Guam, and the Northern Mariana Islands). This report will recommend optimal survey designs and statistical procedures and suggest advancements to the PIFSC data enterprise system. The draft of this report is currently under review and will be published in early 2014.

- While we have made substantial progress since its 2010 external review of its data management approach spanning multiple programs[1], we agree there is more to be accomplished.

[1] [http://www.pifsc.noaa.gov/do/ExternalReview_2010.php]

- We are stepping back to look at our data objectives in the larger context of multifaceted needs. Meeting those objectives will assist the integration of programs identified in the first bullet. The PIFSC data management steering committee (DMSC), reconfigured in November 2013, has prepared a data management life cycle framework for major data sets within PIFSC. The DMSC has also completed drafts of a Center-level data management policy and a user guide for implementing that policy. These tools will assist users in both direction and execution of data management. The longline logbook data audit, as well as the creation of an integrated database on fisheries independent and dependent information to assist the PIFSC bottomfish assessment efforts, are priorities for the DMSC in 2014.

- We agree that, as was recommended in the 2010 review, a centralized data manager, with expertise in data analysis, to oversee the integration of diverse data sets would greatly help in the integration and streamlining process. However given ever tightening budgets, we set up a data management steering committee to meet this 2010 recommendation. There have been real improvements in the compilation and publication of metadata and in integrating some of our data sources. Often real positive change requires slower culture changes. We have reconfigured the DMSC to empower this team to make the appropriate and timely decisions to realize PIFSC centralized data management goals.

- We need to continue working with its partners and stakeholders to find the appropriate balance in providing fishery information for high priority stock assessments and for other purposes including NEPA and fishery management documents, short-term analyses, etc. A few panelists highlighted the need to prioritize assessments through the use of Management Strategy Evaluations (MSEs) as a means of prioritizing our work. During this fiscal year, we will formally evaluate which fishery assessments could most benefit from an MSE or equivalent evaluation and determine if the information exists to conduct such a test.

- Life history information, being provided by a small number of staff working with a high volume of samples and under high demand for results, was seen by the reviewers as a bottleneck. We agree we will work towards ensuring that our life history and bio-sampling programs provide requisite and timely data. These data fulfill two purposes 1) use in stock assessments for the entire Pacific Islands fisheries management region and 2) for the NOAA Fisheries regional office, the fishery management council and the territorial fisheries agencies management needs.

    - In response to the review recommendations, and to increase the capacity within the Life History Program, staff (one FTE) was reassigned from the Stock Assessment Program to the Life History Program. This move significantly augments LHP staff and should allow us to be more responsive regarding access to life history information, bio-sampling requests and meeting the life history needs of our key stakeholders.

    - In addition to existing staff changes, a new grant was recently awarded to JIMAR that will bring on one additional staff to provide dedicated analytical support for data analysis in the territorial sampling program. We expect to work with JIMAR in conducting and completing recruitment for the data analyst position by Spring 2014.

- The PIFSC Life History Program is currently working on methods of accelerating the development of life history information needed by management agencies. These include the development of “proxies” for the reproductive related life history parameters of bio-sampled reef fish species in the Pacific Territories. This information is formulated by data mining the bio-sampling data collected from the Territories to evaluate and conduct more rapid parameter estimates of reproductive life history traits. Use of rapid parameter assessments ("proxies") comes with the realization that these life history estimates are more approximate in nature. These proxies can provide the stock assessment community, the Council and the Territories more timely information on length frequency, spawning season, and size and age at median maturity for these species.